IN THE SPECIFICATION

Please replace the paragraph beginning on Page 6, line 23 and ending on Page 7, line 17 with the following paragraph:

Referring to FIG. 1, a network 10 including a plurality of network elements 16a-16c, each element providing some form of network functionality is shown. The network elements 16a-16 are coupled to element management systems 12a-12b via a network 14. The network elements 16a-16c provide a command line interface (CLI) and possibly additional machine-to-machine management protocols such as Simple Network Management Protocol (SNMP) and Extensible Markup Language (XML) for element management systems 12a-12b. Typically, an element management system is required to manage configuration data 26, run time status data 28 (e.g., statistics or accounting data), and system event data 30. A single element management system, e.g., 12a can manage multiple network elements 16a-16c, or multiple element management systems 12a-12c can manage a set of multiple network elements 16a-16c. The network 16a-16c can interface with one or more managed objects or components 18a-18c. For instance, the managed objects or components can include ports on network interface cards, slots within a backplane and others.

Please replace the paragraph beginning on Page 7, line 18 and ending on Page 8, line 9 with the following paragraph:

Referring to FIG. 2, a development environment 40 that assists in the development of management interfaces between a development environment and a network element management system, are shown. the The network elements 16a-16c, and associated system documentation for

the network elements is ~~is~~ <u>are also</u> shown. The development environment 40 includes a data model

environment 22 that provides a set of tools for developers and documentation primes (e.g.,

placeholders in the document that are filled in with data during generation) to maintain a global

repository 24 for the network element data model. The global repository 24 stores the data

model in a single representation using industry standard modeling languages. This single data

model representation is used in the development of external management interfaces. External

interfaces can include, for example, a command line interface 40, an SNMP interface 33, an

XML interface 34, and so forth.

Please replace the paragraph beginning on Page 8, line 10 and ending on Page 8, line 21

with the following paragraph:

The model environment also can automatically generate software to support development

of required network element infrastructures such as a configuration database 36, parsing and

formatting routines for commands, events and data specific to any external management

interface, and application specific code ~~38~~ for managing data, responding to commands, and

generating events. The model environment also provides data translation 56 for the generation of

system documentation to formally describe the external interfaces. For example, the data model

for a network element may model card types that are provisioned into a slot of a network element

by commands generated by the model environment.

Please replace the paragraph beginning on Page 11, line 10 and ending on Page 11, line

20, with the following paragraph:

A data modeling environment for building network elements and network element systems includes the use of a global data model stored in the global repository. Multiple users can reference and modify the data model in the model environment 22. For example, software developers 46 and documentation writers 44 may <u>receive information by browsing 54 model environment 22</u> and modify the data model in the model environment <u>22</u> to meet overall product needs. System designers 42 can also generate data definitions 48<u>, obtain information by browsing 50 model environment 22</u> and store the definitions in the model environment <u>22</u>. Technical writers 44 generate and store help data 52 in the model environment 22.

Please replace the paragraph beginning on Page 12, line 9 and ending on Page 12, line 20, with the following paragraph:

The data in the model environment in combination with the code generation based on the defined XML schema can be used to generate a variety of external interfaces. Data translation 56 of data in the model environment 22 generates system documentation 64. <u>The model environment 22 can also generate schemas for network management systems such as Element Management Systems (EMS) and Network Management Systems (NMS) schemas 68.</u> The model environment can also generate schema <u>58</u> and code <u>62</u> for a network element 32 to implement a command line interface (CLI), an XML interface providing CLI capabilities, a configuration database, and SNMP agents or subagents to support SNMP access. The model environment 22 can also generate application specific code to provide APIs to support configuration, querying, and reporting events in the OAM 74.

Please replace the paragraph beginning on Page 14, line 23 and ending on Page 15, line 9 with the following paragraph:

The SMI/MIB model 108 describes data accessible using the SNMP protocol, and this same data may be used to generate requests or to show responses to commands. The SMI/MIB model 108 includes queryable operational data (e.g., counters, gauges, statistics, and state data), as well as traps (e.g., autonomous events to be reported by a network element function). Data represented in the SMI/MIB model is accessible using the SNMP protocol (e.g., the SNMP get command) but the ~~date~~ data may also be referenced by commands of other external interfaces such as CLI operational show commands or XML interface operational show commands.

Please replace the paragraph beginning on Page 15, line 10 and ending on Page 15, line 21, with the following paragraph:

The data in the SMP/MIB model 108 is modeled using structure of management information (SMI) language according to IETF standards. Both standard management information bases (MIBs) 72 and enterprise MIBs can be used to represent the data. A MIB is a formal description of a set of network objects that can be managed by Simple Network Management Protocol (SNMP) Manager 70 using the Simple Network Management Protocol (SNMP). The format of the MIB for any defined network element function may be defined as part of the IETF MIB RFCs for SNMP management. There are MIBs (or MIB extensions) for sets of related network entities to be managed. Product developers generate and register new (Enterprise) MIB extensions to provide functionality not expressed in the standard MIBs.

Please replace the paragraph beginning on Page 16, line 17 and ending on Page 17, line 2, with the following paragraph:

Referring to FIG. 4, <u>system 120 shows</u> a relationship between the four elements included in the data model 102 is shown. The components of the data model 102 are interrelated to provide a consistent, single interface to an application 122. The component model 104 provides an interface to the application 122. The other elements of the data model are directly (or indirectly) linked to the component model 104. The component model 104 above is not depicted at the instance level. Instead, each modeled component is uniquely defined in the component hierarchy 127<u>, as shown in FIG. 4 by arrow 124</u>.

Please replace the paragraph beginning on Page 17, line 19 and ending on Page 18, line 2, with the following paragraph:

SMI elements (MIBs 152, tables 156, and traps 154) are associated with one or more modeled components (as indicated by arrows 140). Traps 154 can also be associated with an alarm 138<u>, as shown by arrow 150</u>. In some examples, if a standard trap is not used (or is replaced by a more extensive enterprise trap), there may be no association. In this example, the trap 154 and associated alarm 138 are linked to the same component in the component model ~~126~~ <u>104</u>.